

I B.Tech(ccc) Regular Examinations, December 2007

C AND DATA STRUCTURES**(Electronics & Communication Engineering)****Time: 3 hours****Max Marks:100****Answer any FIVE Questions
All Questions carry equal marks**

1. (a) What is a variable? Explain the following in detail with example.
 - i. Primary Type declaration.
 - ii. User define type declaration.
 - iii. Declaration of storage value.(b) Explain the following in detail and write its general format
 - i. Assignment statement.
 - ii. Declaring variable as constant.
 - iii. Declaring variable as volatile.
 - iv. Reading data from keyboard. [8+12]
2. (a) Describe in detail the execution of while statement with example.
(b) Given a number, write a program using while loop to reverse the digits of the number. For e.g. 12345 should be written as 54321.
(c) Write a program to compute the sum of the digits of a given integer number. [5+8+7]
3. (a) What do you mean by functions? Give the structure of the functions and explain about the arguments and their return values.
(b) Write a C program that uses a function to sort an array of integers. [10+10]
4. (a) Explain the process of accessing a variable through its pointer. Give an Example.
(b) Write a C program using pointers to read in an array of integers and print its elements in reverse order. [10+10]
5. (a) Explain the command line arguments. What are the syntactic constructs followed in C.
(b) Write a C program to read the input file from command prompt, using command line arguments. [8+12]
6. What is a stack? Explain two different representations of a stack. List the operations performed on a stack and write functions for implementing these operations. [20]
7. Explain non-recursive and recursive algorithm for **Postorder traversal** of binary tree. [20]

8. (a) Write and explain **linear search** procedure with a suitable example.
(b) Formulate recursive algorithm for **binary search** with its timing analysis.
[5+15]
